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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,543	09/19/2005	Francois Lhermite	ONS00541	1655
27255 7590 08/31/2007 SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC ATTN: ROBERT D. ATKINS/LAW DEPT./MD 1700 P.O. BOX 62890 PHOENIX, AZ 85082-2890			EXAMINER MOFFAT, JONATHAN	
			ART UNIT 2863	PAPER NUMBER
			MAIL DATE 08/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/549,543

Applicant(s)

LHERMITE ET AL.

Examiner

Jonathan Moffat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,11-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 3,6,8-10,16,18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/19/2005.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Further, the first line of the specification does not claim benefit of applicant's PCT/US04/06281.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the summation of the calculated supply-side power and the secondary-side voltage (claims 3, 6, 9 and 16) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 3-4, 6, 8-10, 16 and 18-19 are objected to because of the following informalities:

In claims 4 there appears to be a minor typographical error in the form of "brow-out" instead of "brown-out".

Claim 6 is objected to as it appears to be identical in scope to claim 9.

Claims 3, 6, 9-10 and 16 are objected to for being unclear. As stated in the above drawings objection, the examiner is not certain how or why the feedback voltage signal is added to the input power signal. At first glance it would appear that, at the least, the units would be incorrect in such an addition. Figure 2 shows an adding component (92) but the power signal is not connected as an input nor is the feedback voltage signal. Further clarification is requested.

Claim 8 is objected to for being unclear. The claim discusses dividing an input power signal by the voltage feedback signal. Although this may be a valid calculation (resulting in a signal with units of current) the examiner is not certain how this is integral to applicant's invention. Figure 2 shows a dividing component (94) with the input power as one input. However, the other input is not the feedback voltage but an error signal generated by comparing the feedback voltage to a reference voltage. Though this is known in the art, it does not appear to match up. Further clarification is requested.

Claims 18-19 are objected to for being unclear. The claims discuss comparing the input power signal to the feedback voltage. As stated above, this does not appear in the drawings and the examiner is uncertain as to how this concept is related to applicant's invention. At first

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glance it would appear that, at the least, the units would be incorrect in such a comparison.

Further clarification is requested.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1.

Claims 1-2, 5, 7, 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US pat 5481730) hereafter referred to as "Brown ('730)" in view of Brown (US pat 5726901) hereafter referred to as "Brown ('901)".

With respect to claim 1, Brown ('730) discloses a method comprising:

1) Determining an input voltage and current of a power supply system (column 1 lines 48-53 and column 2 lines 24-27 and 45-55).

2) Using the input voltage and current to regulate an output voltage of the power supply system to a desired value (column 1 lines 56-63 and column 2 lines 45-55).

With respect to claim 2, Brown ('730) discloses that PWM signals may be used to control a power switch of a power supply (column 5 lines 5-29) though this is not the preferred embodiment it would have been obvious to one of ordinary skill in the art.

With respect to claim 5, Brown ('730) discloses a method comprising:

1) Coupling the power supply controller to receive a first signal representative of an input voltage and a second signal representative of an input current (column 1 lines 48-53 and column 2 lines 24-27 and 45-55).

2) Coupling the power supply controller to receive a feedback signal representative of an output voltage (column 1 lines 48-53, column 2 lines 43-45 and column 3 lines 30-47 and column 4 lines 56-67).

3) Coupling the power supply controller to form drive pulses to regulate the output voltage responsively to the power signal and the feedback signal (column 1 lines 56-63 and column 5 lines 5-29).

With respect to claim 11, Brown ('730) discloses coupling the power supply controller to regulate the output voltage to a desired value (column 1 lines 56-63 and column 5 lines 5-29). Although Brown ('730) does not disclose a specific accuracy, one of ordinary skill in the art would be aware that it is desirable to increase the accuracy of such a regulation and that the intention is normally for the accuracy to be 0% error. Further, Brown ('730) discloses one embodiment as being an emergency shutdown (0V and 0A). It can be reasonably assumed that this device, when shutting down the output, is within 10% of 0V.

With respect to claim 15, Brown ('730) discloses an apparatus comprising:

1) A component coupled to receive a voltage representative of an input voltage and receive a current sense signal representative of an input current (column 1 lines 48-53 and column 2 lines 24-27 and 45-55).

2) A PWM controller of the power supply controller coupled to form drive pulses to regulate an output voltage (column 5 lines 5-29).

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3) An error block of the power supply controller coupled to receive the power signal, a feedback signal, and the current sense signal and responsively control the PWM controller to form the drive pulses (column 1 lines 56-63 and column 3 lines 30-47 and column 4 lines 56-67 and column 5 lines 5-29).

With respect to claims 1, 5, 7 and 15 Brown ('730) fails to specify that the power input is determined as a product of input current and input voltage. The examiner believes that, to one of ordinary skill in the art, it would have been obvious to multiply these input values together to get the input power and that it would have required no more than routine skill in the art. However, as additional evidence, the examiner relies upon a secondary reference.

Brown ('901) teaches, with respect to claims 1, 5, 7 and 15, monitoring input power to a power supply system (Fig 1) by multiplying input voltage and input current with a multiplier (Fig 1 "multiplier").

As stated above, the examiner believes that multiplying current and voltage to determine power would have been obvious to one of ordinary skill in the art based upon Brown ('730) alone. However, it further would have been obvious to one of ordinary skill in the art to combine Brown ('730) with the teachings of Brown ('901) by doing so. This is a well-known method of determining input power, which is useful for determining consumption by the device, efficiency of the supply, and other characteristics.

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2.

Claims 4, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown ('730) and Brown ('901) as applied to claims 1, 5 and 15 above, and further in view of Stitch (US pat 5315533).

With respect to claims 4, 12 and 17, Brown ('730) and Brown ('910) fail to disclose brown-out detection and protection.

Stitch teaches, with respect to claims 4, 12 and 17, brown-out detection and protection (abstract and column 4 lines 8-23).

It would have been obvious to one of ordinary skill in the art to modify the method and apparatus of Brown and Brown by utilizing it for assured power delivery (brown-out prevention) as taught by Stitch. The "uninterruptible" power supply of Stitch is a common method of protecting computer resources (Stitch column 1 lines 20-40) such as that of Brown ('730) as shown in Figure 1.

3.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown ('730) and Brown ('901) as applied to claim 5 above, and further in view of Hall (US pat 5502370).

With respect to claim 14, Brown ('730) and Brown ('910) fail to disclose keeping the input power constant in an overload condition.

Hall teaches, with respect to claim 14, coupling the power supply controller to maintain input power substantially constant during an overload condition (abstract and column 1 lines 22-32).

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It would have been obvious to one of ordinary skill in the art to modify the method and apparatus of Brown and Brown by monitoring and preventing power supply spikes by regulating the input power as taught by Hall. This is beneficial according to Hall (column 1 lines 33-45) and additionally for preventing damage to the system due to power surge.

4.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown ('730) and Brown ('901) as applied to claim 5 above, and further in view of Kinghorn (US pat pub 20020071301).

With respect to claim 13, Brown ('730) and Brown ('901) fail to disclose generating a haversine form control signal.

Kinghorn teaches, with respect to claim 13, generating a haversine form control waveform (paragraphs 0048, 0052, 0074).

It would have been obvious to one of ordinary skill in the art to modify the method of Brown ('730) and Brown ('901) by using a haversine waveform as taught by Kinghorn. The use of a lookup table is a fast way of determining an output value. Further, this insures unity of phase between the input and output signals and reduces required components (Kinghorn paragraph 0074).

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Due to the confusion in claim interpretation concerning claims 3, 6, 8-10, 16 and 18-19, the examiner presents the following prior art as what is believed to be along the line of applicant's intentions:

Jonker (US pat pub 20030014200) provides for constant voltage output regulation with brownout and other irregularity compensation via voltage output feedback.

Liu (US pat 6574124) uses a feedback voltage compared to a reference voltage forming an error signal via comparator. This is then used to determine the required inputs to regulate the voltage output.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Moffat whose telephone number is (571) 272-2255. The examiner can normally be reached on Mon-Fri, from 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

6/17/07

JM *for*

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